AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for producing a capacitor comprising, as one electrode (anode), an electric conductor having pores and having formed on the surface thereof a dielectric layer and, as the other electrode (cathode), a semiconductor layer formed on the electric conductor from a semiconductor layer-forming precursor by energization in ~~a semiconductor layer-forming~~ an electrolytic solution, the method comprising ~~impregnating the pores of the electric conductor with a semiconductor layer-forming precursor before energization to render the concentration of semiconductor layer-forming precursor in the pores higher than that of semiconductor layer-forming precursor in the electrolytic solution, immersing the impregnated electric conductor into the electrolytic solution, and~~ passing an electric current through the electrolytic solution to form the semiconductor layer on the ~~impregnated~~ electric conductor by energization in the electrolytic solution in a state in which the concentration of the semiconductor layer-forming precursor in the pores of the electric conductor is higher than the concentration of semiconductor layer-forming precursor in the electrolytic solution.

2. (original): The method for producing a capacitor as claimed in claim 1, wherein the electrolytic solution is an electrolytic solution not containing a semiconductor layer-forming precursor.

3. (original): The method for producing a capacitor as claimed in claim 1, wherein the electric conductor is at least one member selected from a metal, an inorganic semiconductor, an organic semiconductor and carbon or a mixture thereof.

4. (original): The method for producing a capacitor as claimed in claim 1, wherein the electric conductor is a laminated body having, as the surface layer, at least one member selected from a metal, an inorganic semiconductor, an organic semiconductor and carbon, or a mixture thereof.

5. (previously presented): The method for producing a capacitor as claimed in claim 3, wherein the electric conductor is a metal or alloy mainly comprising at least one member selected from tantalum, niobium and aluminum, or a niobium oxide.

6. (original): The method for producing a capacitor as claimed in claim 1, wherein the electric conductor is tantalum having a CV value of 100,000 μF·V/g or more.

7. (original): The method for producing a capacitor as claimed in claim 1, wherein the electric conductor is niobium having a CV value of 150,000 μF·V/g or more.

8. (previously presented): The method for producing a capacitor as claimed in claim 1, wherein the electric conductor has a size of 5 mm^3 or more.

9. (previously presented): The method for producing a capacitor as claimed in claim 1, wherein the electric conductor has a foil shape and the depth of pore formed by etching is 200 μm or more.

10. (original): The method for producing a capacitor as claimed in claim 1, wherein the dielectric layer mainly comprises at least one member selected from metal oxides such as Ta_2O_5, Al_2O_3, TiO_2 and Nb_2O_5.

11. (previously presented): The method for producing a capacitor as claimed in claim 1, wherein the semiconductor layer-forming precursor is at least one member selected from an aniline derivative (raw material of polyaniline), a phenol derivative (raw material of polyoxyphenylene), a thiophenol derivative (raw material of polyphenylene sulfide), a thiophene

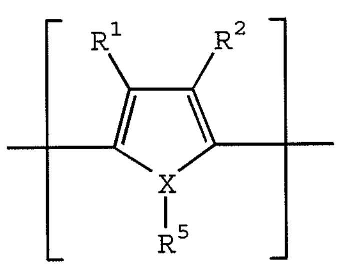
derivative (raw material of polythiophene), a furan derivative (raw material of polyfuran) and a pyrrole derivative (raw material of polypyrrole or polymethylpyrrole).

12. (original): The method for producing a capacitor as claimed in claim 11, wherein the semiconductor layer-forming precursor is pyrrole or 3,4-ethylenedioxythiophene.

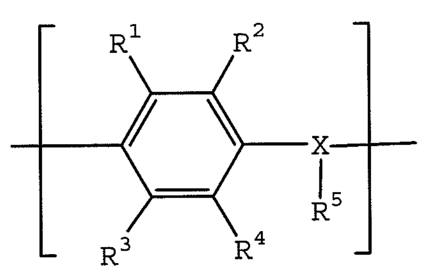
13. (previously presented): The method for producing a capacitor as claimed in claim 1, wherein the semiconductor layer-forming precursor is a compound which is oxidized or reduced by energization and becomes an inorganic semiconductor.

14. (original): The method for producing a capacitor as claimed in claim 1, wherein the semiconductor layer is at least one member selected from an organic semiconductor layer and an inorganic semiconductor layer.

15. (original): The method for producing a capacitor as claimed in claim 14, wherein the organic semiconductor is at least one member selected from an organic semiconductor comprising benzopyrroline tetramer and chloranil, an organic semiconductor mainly comprising tetrathiotetracene, an organic semiconductor mainly comprising tetracyano-quinodimethane, and an organic semiconductor mainly comprising an electrically conducting polymer obtained by doping a dopant into a polymer containing a repeating unit represented by the following formula (1) or (2):



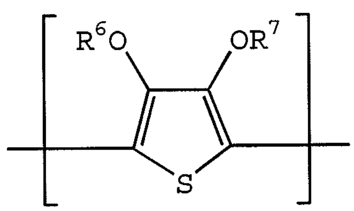
(1)



(2)

wherein R^1 to R^4 each independently represents a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an alkoxy group having from 1 to 6 carbon atoms, X represents an oxygen atom, a sulfur atom or a nitrogen atom, R^5 is present only when X is a nitrogen atom, and represents a hydrogen atom or an alkyl group having from 1 to 6 carbon atoms, and each of the pairs of R^1 and R^2, and R^3 and R^4 may combine with each other to form a cyclic structure.

16. (original): The method for producing a capacitor as claimed in claim 15, wherein the electrically conducting polymer containing a repeating unit represented by formula (1) is an electrically conducting polymer containing a structure unit represented by the following formula (3) as a repeating unit:



(3)

wherein R^6 and R^7 each independently represents a hydrogen atom, a linear or branched, saturated or unsaturated alkyl group having from 1 to 6 carbon atoms, or a substituent for forming at least one 5-, 6- or 7-membered saturated hydrocarbon cyclic structure containing two oxygen atoms when the alkyl groups are combined with each other at an arbitrary position, and the cyclic structure includes a structure having a vinylene bond which may be substituted, and a phenylene structure which may be substituted.

17. (original): The method for producing a capacitor as claimed in claim 16, wherein the electrically conducting polymer is selected from polyaniline, polyoxyphenylene, polyphenylene sulfide, polythiophene, polyfuran, poly-pyrrole, polymethylpyrrole, and substitution derivatives and copolymers thereof.

18. (original): The method for producing a capacitor as claimed in claim 17, wherein the electrically conducting polymer is poly(3,4-ethylenedioxythiophene).

19. (original): The method for producing a capacitor as claimed in claim 14, wherein the inorganic semiconductor is at least one compound selected from molybdenum dioxide, tungsten dioxide, lead dioxide and manganese dioxide.

20. (previously presented): The method for producing a capacitor as claimed in claim 14, wherein the electrical conductivity of the semiconductor is from 10^{-2} to 10^{3} S/cm.

21. (previously presented): A capacitor produced by the production method claimed in claim 1.

22. (original): The capacitor as claimed in claim 21, wherein the impregnation ratio of the semiconductor is 90% or more.

23. (previously presented): An electronic circuit using the capacitor claimed in claim 21.

24. (previously presented): An electronic device using the capacitor claimed in claim 21.

25. (new): The method for producing a capacitor as claimed in claim 1, which further comprises impregnating the pores of the electric conductor with a semiconductor layer-forming precursor before energization, immersing the impregnated electric conductor into the electrolytic solution, and then passing an electric current through the electrolytic solution to form the semiconductor layer on the impregnated electric conductor by energization in the electrolytic solution in a state in which the concentration of the semiconductor layer-forming precursor in the pores of the electric conductor is higher than the concentration of semiconductor layer-forming precursor in the electrolytic solution.